THE CLAIMS

I CLAIM:

1. A method of making a medical device having at least a portion for insertion or implantation into the body of a patient, wherein the portion has a surface which is adapted for exposure to body tissue of the patient and wherein at least a part of the surface is a porous surface having a plurality of voids therein to release at least one biologically active agent therefrom, the method comprising loading the porous surface with the biologically active agent by
   - a) forming a solution or suspension of the biologically active agent,
   - b) placing the device into the solution or suspension,
   - c) placing an electrode in the solution or suspension,
   - d) applying an electric current to the device and the electrode, and
   - e) allowing at least some of the biologically active agent to be loaded into the voids.

2. The method of claim 1 wherein the device comprises at least a metal portion.

3. The method of claim 1 wherein the electrode functions as a cathode and the biologically active agent has a negative charge.

4. The method of claim 1 wherein the electrode functions as an anode and the biologically active agent has a positive charge.

5. The method of claim 1 wherein the device is a stent.

6. The method of claim 5 wherein the stent comprises a metallic material.

7. The method of claim 6 wherein the stent is a self-expanding stent.

8. The method of claim 6 wherein the stent is a balloon-expandable stent.

9. The method of claim 1 wherein the device is a stent graft.

10. The method of claim 9 wherein the stent graft comprises a metallic material.

11. The method of claim 1 wherein the biologically active agent is heparin.

12. The method of claim 1 wherein the biologically active agent is loaded immediately before implantation of the device.

13. The method of claim 1 wherein at least some of the voids contain a particulate material prior to placing the device into the solution or suspension.

14. A method of making a medical device having at least a portion for insertion or implantation into the body of a patient, wherein the portion has a surface which is adapted for exposure to body tissue of the patient and wherein at least a part of the surface is covered with a porous coating having a plurality of voids for release of at least one biologically active agent therefrom, the method comprising:

a) forming the porous coating on the surface by

  i) applying a composition comprising a polymer and a particulate material to the surface and

ii) exposing the surface to a solvent to elute the particulate material from the polymer; and

b) loading the porous coating with the biologically active agent by

i) forming a solution or suspension of the biologically active agent,

ii) placing the coated device into the solution or suspension,

iii) placing an electrode in the solution or suspension,

iv) applying an electric current to the coated device and the electrode, and

v) allowing at least some of the biologically active agent to be loaded into the voids.

15. The method of claim 14 wherein the device comprises at least a metal portion.

16. The method of claim 15 wherein the device is an expandable stent.

17. The method of claim 14 wherein the electrode functions as a cathode and the biologically active agent has a negative charge.

18. The method of claim 14 wherein the electrode functions as an anode and the biologically active agent has a positive charge.

19. The method of claim 14 wherein the polymer is an elastomer.

20. The method of claim 19 wherein the elastomer is selected from the group consisting of silicones, polyurethanes, polyisobutylene and its copolymers,

thermoplastic elastomers, ethylene vinyl acetate copolymers, polyolefin elastomers, and EPDM rubbers.

21. The method of claim 14 wherein the particulate material is selected from the group consisting of polyethylene oxide, polyethylene glycol, polyethylene oxide/polypropylene oxide copolymers, polyhydroxyethylmethacrylate, polyvinylpyrrolidone, polyacrylamide and its copolymers, salts, sugars and elutable biologically active agents.

22. The method of claim 14 which further comprises curing the coating after eluting the particulate material and before loading the biologically active agent.

23. The method of claim 14 which further comprises curing the coating after it is loaded with the biologically active agent.

24. The method of claim 14 wherein at least some of the voids contain a particulate material prior to placing the device into the solution or suspension.

25. A device produced by the method of claim 1.

26. A device produced by the method of claim 14.

27. A method of making an expandable metal stent prosthesis having a surface covered with a porous coating having a plurality of voids therein to release at least one biologically active agent therefrom, the method comprising:

a) forming the porous coating on the surface by
    i) applying a composition comprising a polymer and a particulate material to the surface and

    ii) exposing the surface to a solvent to elute the particulate material from the polymer; and

  b) loading the porous coating with the biologically active agent by

    i) forming a solution or suspension of the biologically active agent,

    ii) placing the coated device into the solution or suspension,

    iii) placing an electrode in the solution or suspension,

    iv) applying an electric current to the coated device and the electrode, and

    v) allowing at least some of the biologically active agent to be loaded into the voids.

28. A method of making a stent graft having a porous surface having a plurality of voids therein to release at least one biologically active agent therefrom, the method comprising loading the porous surface with the biologically active agent by

  a) forming a solution or suspension of the biologically active agent,

  b) placing the device into the solution or suspension,

  c) placing an electrode in the solution or suspension,

  d) applying an electric current to the device and the electrode, and

  e) allowing at least some of the biologically active agent to be loaded into the voids.